



# IPC-M4884I

M.2 PCIe Industrial I/O Control Board

8-ch Isolated Digital Input

8-ch Isolated Digital Output



## Introduction

SUNIX IPC-M4884I, industrial isolated digital I/O M.2 PCIe card, is designed for PC-based IoT Gateway or Edge Computer that enables data acquisition and I/O controls in industrial automation. This board built-in SUNIX Digital-I/O controller, **QiuNiu**, and also built with many of SUNIX advanced features and technologies. In addition, SUNIX provides API software and SDK library, allowing users to program under Windows 10/11 and Linux operating systems. The software package includes a dynamic library.dll, C, C# and Python programming language sample code, making it easier to develop application software. SUNIX IPC-M4884I board enriches digital I/O expandable capacity with cost-efficient design; it is the best digital I/O control solution for lite-industrial applications.

## Features

- Suitable for M.2 slot with Key-M or Key-B based on PCI Express communication.
- Designed to meet PCI Express Base Specification Revision 2.1.
- With high reliable SUNIX **QiuNiu** Digital-I/O controller.
- Plug-n-Play, I/O address and IRQ assigned by system.
- Ultra low power consumption (<1.5W) design for green environment and industrial application.
- High quality electronic components, low impedance and high stability ensure product quality and reliability.
- Support Microsoft Windows 10/11 and Linux with C, C# and Python programming language sample code.
- Capable of engaging with EdgeX device C SDK for EdgeX service development.
- Certified by CE, FCC, RoHS, and Microsoft approvals.
- With low profile bracket extension board to meet various of Edge PC chassis.

### Digital I/O Interfaces:

- Expands isolated eight (8) digital input channels with features for all channels.
  - Support both NPN & PNP devices
  - Support both dry and wet contact connections
  - With digital filter for noise reduction
  - Built-in 32-bit counter for all digital in channels
- Expands isolated eight (8) NPN type digital output channels with initial value (Booting & Restart) protection.
- Each channel built-in 2.5KV isolation protection for signal and power, allowing the input signals to be completely floated so as to prevent ground loops.

## Specifications

### Board Level

<b>Interface</b>	M.2 PCI Express
<b>Controller</b>	SUNIX <b>QiuNiu</b> Digital-I/O controller
<b>BUS</b>	PCI Express Gen1 x 1 (single Lane)
<b>IRQ &amp; IO</b>	Assigned by System
<b>ESD Protection</b>	±15KV IEC61000-4-2 Air Gap Discharge ±8KV IEC61000-4-2 Contact Discharge

## Digital Input

<b>Type</b>	NPN & PNP	<b>Channel</b>	8-channel
<b>Dry Contact</b>	Logic Level 0: Open; Logic Level 1: Close to GND	<b>Wet Contact</b>	Logic Level 0: 0 to 3VDC; Logic Level 1: 10 to 50VDC
<b>Input Resistance</b>	10KΩ	<b>Isolation</b>	2500 VDC
<b>Counter</b>	32-bit counter on all channel	<b>Frequency</b>	Input Range 2KHz max.
<b>Digital Filter</b>	Digital filter for noise reduction	<b>Pin Define</b>	DI1~D8, COM, GND
<b>Interrupt Mode</b>	Event trigger (Rising Edge, Falling Edge, Both modes) & polling for all channels		
<b>PCB Connector</b>	Terminal block on extension board		

## Digital Output

<b>Type</b>	NPN	<b>Channel</b>	8-channel
<b>Voltage Range</b>	3.5 to 40VDC	<b>Current</b>	500mA per Channel
<b>Isolation</b>	2500 VDC	<b>Pin Define</b>	DO1~DO8, PWR, GND
<b>Initial Protection</b>	Load preset output value automatically during booting and restart		
<b>PCB Connector</b>	Terminal block on extension board		

## Software Support

<b>OS</b>	Windows 10 (X86/X64), Windows 11, Linux
<b>SDK</b>	Library: Supporting C, C++, C# and Python languages. C, C# and Python sample code available
<b>Third Party Software support</b>	Capable of engaging with EdgeX device C SDK for EdgeX service development.

## Declaration

<b>Green Product</b>	RoHS, WEEE
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## Regulatory Approvals

<b>Hardware</b>	CE / FCC / VCCI / BSMI
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## Environment

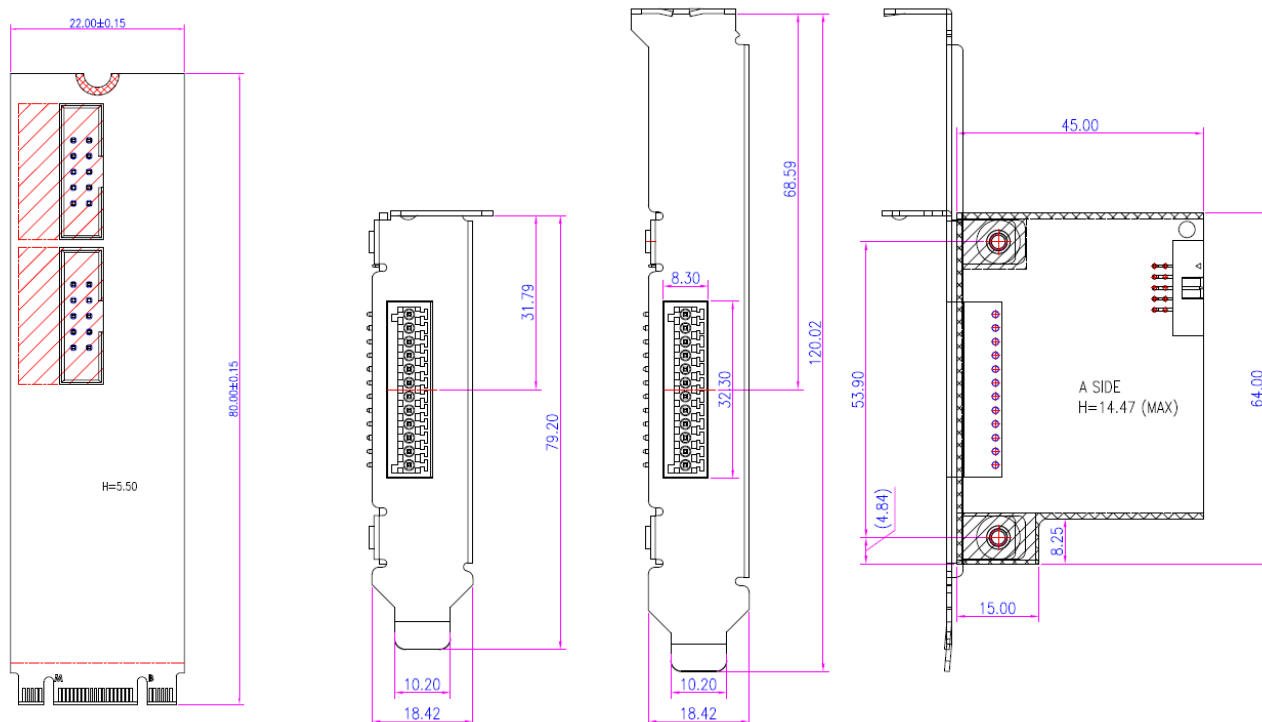
Operation Temperature	-20 to 70°C (-4 to 158°F)
Operation Humidity	5 to 95% (non-condensing)
Storage Temperature	-20 to 70°C (-4 to 158°F)

## Dimension

PCB Dimension	M.2 card 80x22mm / Extension board 64 x 45 mm
Bracket	Low Profile 79.2mm
Bracket Space	2

Unit: mm

Extension board

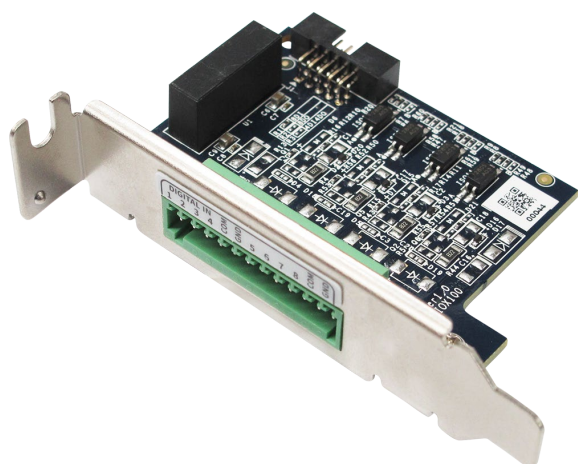


## Package

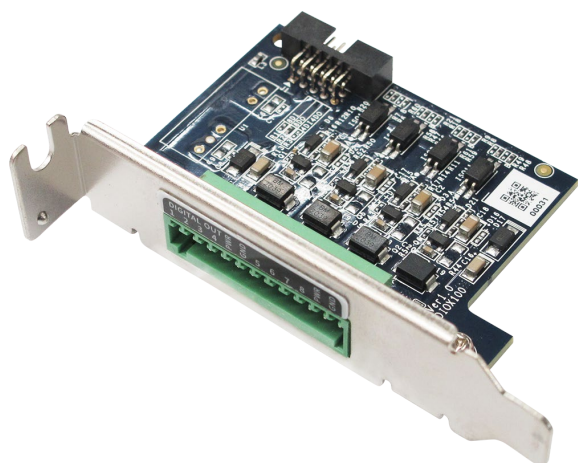
- IPC-M4884I PCI Express Industrial I/O Control Board
- Extension board with low profile bracket
- Standard Bracket
- 2x5 ribbon cable 15 cm
- Terminal block

## Pin Assignment

### ■ Digital Input / Output



PIN	Signal
1	DI 1
2	DI 2
3	DI 3
4	DI 4
5	COM
6	GND
7	DI 5
8	DI 6
9	DI 7
10	DI 8
11	COM
12	GND



PIN	Signal
1	DO 1
2	DO 2
3	DO 3
4	DO 4
5	PWR
6	GND
7	DO 5
8	DO 6
9	DO 7
10	DO 8
11	PWR
12	GND